

Q2 -21. The process of claim 16 further comprising the step of ply twisting at least two of the yarns to form a plied yarn between the spinning and heating steps.--

REMARKS

Applicant's invention is a process for producing a tufting yarn. Carpet constructed from yarn produced according to this process exhibits improved wear and crush resistance. The yarn is most preferably produced from precursor base fibers and from about 0.1 to 12 weight percent of a heat activated binder material, preferably a binder fiber, that has a lower melting point than the melting point of the base fibers. The precursor base fiber is supplied as a bundle of fibers, either staple or continuous filament, that is subsequently ring spun or wrap spun with a second fiber to form a yarn. The second fiber, which is twisted or wrapped uniformly around the fiber bundle during spinning, comprises a binder material in amount sufficient to constitute 0.1 to 12 percent by weight of the yarn. Two or more of these spun yarns are optionally ply twisted to form a plied yarn. The yarn is heated to melt the binder material (fiber), preferably during twist setting, which causes bonding to occur discontinuously and randomly over substantially the entire length of the yarn at locations of fiber contact. This yarn is then used as face fiber in pile carpet constructions. The bonds formed by the cooled binder material unexpectedly enhance the rigidity of the carpet tufts and thus, their resistance to crushing or compression.

Claim 16 has been amended and claim 21 has been added to more clearly point out and claim what Applicant regards as his invention. Support for these amendments is found in the specification and claims, as filed, more specifically in Examples 3 and 4 found on pages 8 through 11. It is therefore respectfully submitted that the amendments should be entered.

Claim 17 has been canceled without prejudice. The rejections thereof are therefore moot.

Claims 16-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Queen et al. (USP 5,567,258). Applicant respectfully traverses this rejection for the following reasons. All of the claims of the present invention are limited to a fiber bundle ring spun or wrap spun with a second fiber comprising a heat-activated binder material. The binder material is selected to provide good adhesion to the base fiber. Queen et al. indicates that its fiber is a spun blend of cotton and a binder fiber (polyester) that is susceptible to further processing. There is no mention, however, of wrap spinning or ring spinning a base fiber (staple or otherwise) with a second fiber

that includes a heat-activated binder material to create a yarn wherein the second fiber is uniformly twisted or wrapped around the base fiber bundle. There is no reason to infer that the spun blend of Queen et al. has been produced by anything other than the standard spinning of staple fibers into a homogeneous blended yarn. Applicant therefore respectfully requests that this rejection be withdrawn.

Claims 16-18 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO 88/03969. Applicant respectfully traverses this rejection and requests its withdrawal.

The Examiner readily admits that WO'969 fails to disclose ring spinning or wrap spinning the base fiber bundle with a second, binder material-containing fiber to form a yarn characterized by the second fiber being twisted or wrapped uniformly around the base fiber bundle. And although ring spinning and wrap spinning are known yarn-forming methods, there is nothing in WO'969 or the balance of the art made of record by the Examiner to even hint at Applicant's unique process of combining these materials with the binder material/fiber wrapped around the other fiber.

Applicant notes without comment the following prior art made of record by the Examiner, and respectfully submits that it is no more relevant than the art discussed above: USP 4,644,741 to Grading et al.; USP 5,478,624 to Lofquist; USP 3,987,615 to Hill, Jr.; and USP 4,541,231 to Grahma, Jr., et al.

For these reasons, claims 16, 18 and 21 are submitted to be patentable over the art of record. Accordingly, Applicant requests an early and favorable response. In the event there are yet unresolved issues, the Examiner is cordially invited to contact the undersigned patent attorney.

Respectfully submitted,
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I hereby certify that this correspondence is facsimile transmitted to Group Art Unit 1733 Examiner Sam Chuan Yao, 703-305-7718, on January 12, 2000.

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(Signature)

Virginia Szigeti Andrews, Attorney of Record Date: January 12, 2000